


Exhibit 3

(19)  **Europäisches Patentamt**
European Patent Office
Office européen des brevets



(11) **EP 0 727 164 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
21.08.1996 Bulletin 1996/34

(51) Int. Cl.⁶: **A47J 31/06**

(21) Application number: 96102218.3

(22) Date of filing: 15.02.1996

(84) Designated Contracting States:
AT BE CH DE ES FR IT LI NL

(72) Inventor: Fischer, Daniel
8590 Romanshorn (CH)

(30) Priority: 17.02.1995 DE 29502595 U

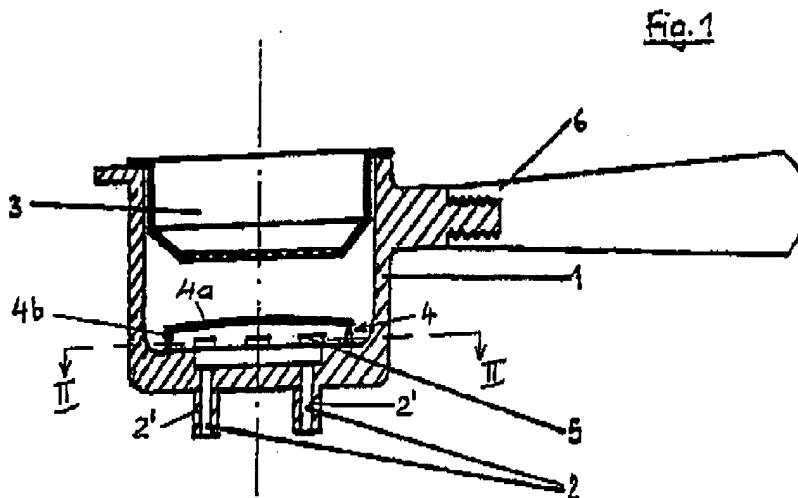
(74) Representative: Schubert, Siegmund, Dipl.-Ing.
Patentanwälte
Dr. Weinhold, Dannenberg,
Dr. Gudel, Schubert
Grosse Eschenheimer Strasse 39
60313 Frankfurt (DE)

(71) Applicant: Eugster/Frismag AG
CH-8590 Romanshorn (CH)

(54) **Filter carrier unit for an espresso making machine**

(57) A filter carrier unit for an espresso making machine includes a filter carrier vessel (1) having a bottom and being adapted to support a filter basket (3) therein; an outlet aperture (2) provided in the vessel bottom; a hood (4) disposed in the vessel and covering the

outlet aperture (2); and a plurality of throughgoing passages (5) provided in the edge region of the hood (4) for allowing espresso coffee to flow through the hood to the outlet aperture.



EP 0 727 164 A1

Printed by Frank Xerox (UK) Business Services
2.13.2004

1

EP 0 727 164 A1

2

Description

CROSS REFERENCE TO RELATED APPLICATION

This application claims the priority of German Utility Model Application No. 295 02 595.6 filed February 17, 1995, which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

This invention relates to a filter carrier unit for an espresso making machine and is of the type that has an upwardly open, pot-shaped filter carrier vessel, from the upper circular edge of which a filter basket is suspended and extends into the inner vessel space. Underneath the bottom of the filter basket the vessel receives the brewed espresso coffee flowing out of the filter basket. The vessel has a bottom provided with at least one outlet aperture (usually formed as an outlet nipple), under which, on an emplacement of the coffee making machine, a receptacle, such as a coffee pot or coffee cup is positioned to receive the coffee discharged through the outlet aperture. The use of two outlet nipples makes possible a simultaneous filling of two cups positioned under a respective outlet nipple.

During the making of espresso coffee, a characteristic, fine-pore foam is formed that floats on the coffee surface. In addition to the taste proper, the fineness of the foam determines the quality of the espresso coffee.

As known, the foam formation on the surface of espresso coffee is often irregular; such irregularities are caused by several factors: the quality of the coffee, the degree of grind, the water temperature, the pressure buildup in the filter, etc. Any of these factors may contribute to conditions resulting in the generation of undesirably large bubbles which are included in the fine-pore foam and which may even temporarily block an outlet nipple. In a filter carrier vessel having a single outlet nipple, such a temporary blockage leads to an intermittent outflow and in filter carrier vessels having two outlet nipples the cups are not filled uniformly.

SUMMARY OF THE INVENTION

It is an object of the invention to provide an improved filter carrier unit of the above-outlined type which ensures that the foam discharged by an outlet nipple is not interrupted by larger bubbles and that the outlet nipple is not blocked which would result in the known disadvantages.

This object and others to become apparent as the specification progresses, are accomplished by the invention, according to which, briefly stated, the filter carrier unit for an espresso making machine includes a filter carrier vessel having a bottom and being adapted to support a filter basket therein; an outlet aperture provided in the vessel bottom; a hood disposed in the vessel and covering the outlet aperture; and a plurality of throughgoing passages provided in the edge region of

the hood for allowing espresso coffee to flow through the hood to the outlet aperture.

The hood placed over the outlet nipple or nipples forms a quieting (flow-calming) path thereover in the filter carrier vessel. The passages are, for example, at least three in number, but preferably five to eight passages are provided.

The size of the passages in the hood is so designed that they sufficiently delay the outflow of the foamy espresso so that the larger, less resistant bubbles burst, while the creamy espresso coffee flows through unaffected. By using such a quieting path, a surprisingly uniform, fine-pore foam is obtained with simple means.

Particularly good results are achieved with a hood that is provided with five to eight circumferentially uniformly distributed passages wherein the individual passages have a semicircular cross-sectional outline having a diameter of 1.5 mm.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a sectional side elevational view of a preferred embodiment of a filter carrier unit according to the invention.

Figure 1a is a fragmentary sectional side elevational view of another preferred embodiment.

Figure 2 is a sectional view taken along line II-II of Figure 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning to Figure 1, there is shown a filter carrier 1 formed as an upwardly open vessel of generally cylindrical shape which, in its bottom, is provided with two outlet apertures 2 formed as respective, outwardly and downwardly projecting outlet nipples 2'. The upper edge of the carrier vessel 1 serves as a support for a circular, radially outwardly projecting shoulder of a filter basket 3 which thus may be suspended to project into the inner space of the carrier vessel 1. Between the filter basket 3 and the bottom of the carrier vessel 1, a collecting space for the creamy espresso coffee is defined which is discharged from the filter basket 3. A manually engageable handle 6 is attached to the filter carrier vessel 1.

The bottom of the filter carrier vessel 1 is covered by a hood generally designated at 4 which extends over the outlet apertures 2 and which essentially has the shape of a flat hollow cylinder having an upright cylinder wall 4b and a closed, outwardly convex top 4a.

In the cylinder wall 4b rectangular outlet passages 5 are provided in uniform distribution. Each outlet passage 5 may have a dimension of, for example, about 3 x 1.5 mm. In the variant shown in Figure 1a the outlet passages 5a are, in contrast, of substantially semicircular shape, each having a radius of, for example, about 1.5 mm. In both cases the passages 5 and, respectively, 5a are formed in the edge region of the cylindrical hood

3

EP 0 727 164 A1

4

wall 4a in such a manner that the passages are open in the direction of the bottom of the filter carrier vessel 1. Stated differently, the lower edge of the cylinder wall 4b, between the passages 5, 5a, is in engagement with the bottom of the carrier vessel 1.

By virtue of the above-described design of the hood 4, and due to the throughgoing outlet passages 5, 5a, a quieting path is provided within the hood 4 for the creamy espresso coffee which passes through the passages 5, 5a in a delayed manner so that the coffee may be discharged through the outlet apertures 2 with a uniform, fine-pore foam.

It will be understood that the above description of the present invention is susceptible to various modifications, changes and adaptations, and the same are intended to be comprehended within the meaning and range of equivalents of the appended claims.

Claims

1. A filter carrier unit for an espresso making machine, comprising

- (a) a filter carrier vessel having a bottom and comprising means for supporting a filter basket therein;
- (b) an outlet aperture provided in said bottom;
- (c) a hood disposed in said vessel and covering said outlet aperture; said hood having an edge region; and
- (d) a plurality of throughgoing passages provided in said edge region for allowing espresso coffee to flow through said hood to said outlet aperture.

2. The filter carrier unit as defined in claim 1, wherein said hood is composed of an upright cylindrical wall and a closed top; said throughgoing passages are provided in said cylindrical wall.

3. The filter carrier unit as defined in claim 2, wherein said cylindrical wall has a lower circumferential edge engaging said bottom of said vessel.

4. The filter carrier unit as defined in claim 3, wherein said throughgoing passages interrupt said lower circumferential edge and said throughgoing passages are bounded by said bottom.

5. The filter carrier unit as defined in claim 2, wherein said top is outwardly convex.

6. The filter carrier unit as defined in claim 1, wherein said throughgoing passages are rectangular and each has a dimension of about 3x1.5 mm.

7. The filter carrier unit as defined in claim 1, wherein said throughgoing passages are semi-circular, and each has a radius of about 1.5 mm.

8. The filter carrier unit as defined in claim 1, wherein the number of said throughgoing passages is about 5 to 8.

9. The filter carrier unit as defined in claim 1, wherein said throughgoing passages are uniformly spaced from one another.

3

EP 0 727 164 A1

Fig. 1

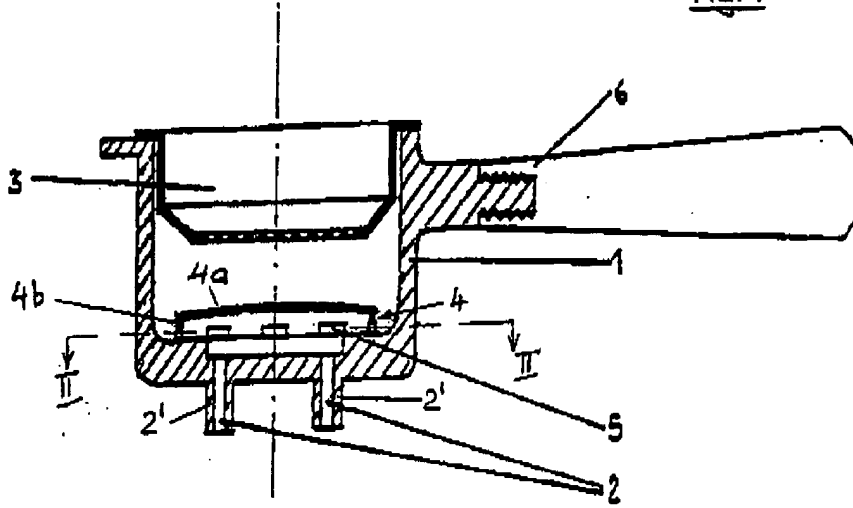


Fig. 1a

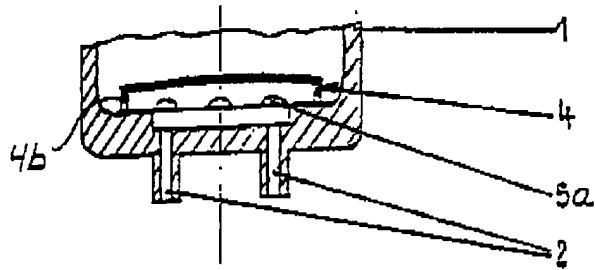
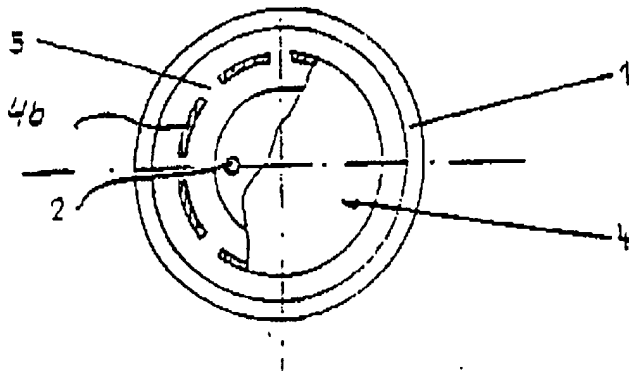


Fig. 2



EP 0 727 164 A1

European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 96 10 2218

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US-A-3 878 772 (NORDSKOG) * column 2, line 66 - column 4, line 66; figure 7 *	1-9	A47J31/06
X	EP-A-0 515 245 (SEB S.A.) * column 2, line 30 - column 4, line 48; figures *	1	
A	DE-A-41 29 814 (SAEZ) * column 2, line 24 - column 3, line 4; figure 1 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A47J
The present search report has been drawn up for all claims:			
Place of search		Date of completion of the search	Examiner
THE HAGUE		25 April 1996	Bodart, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons a : member of the same patent family, corresponding document			

EPO FORM 150 (4/96) (P04000)